



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Tomoyuki KOGO

Group Art Unit: 3748

Application No.: 10/594,580

Examiner: T. TRIEU

Filed: September 27, 2006

Docket No.: 129354

For: EXHAUST GAS CONTROL APPARATUS AND EXHAUST GAS CONTROL
METHOD FOR INTERNAL COMBUSTION ENGINE

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following remarks are directed to the new points of argument raised in the
Examiner's Answer dated March 9, 2011.

A. Rejection Of Claims 10-18 Under 35 U.S.C. §112, Second Paragraph

Appellant appreciates the indication in the Examiner's Answer that the previously-
asserted rejection of claims 10-18 under 35 U.S.C. §112, second paragraph, has been
withdrawn. *See* page 3 of the Examiner's Answer.

B. Claims 10, 14 And 18 Are Patentable Over Saito

1. Saito Would Not Be Modified in the Manner Suggested

The Examiner's Answer continues to ignore the evidence of record regarding the
difficulties incumbent in modifying Saito in the manner suggested. The Office Action admits
that Saito fails to disclose the position of the turbine as recited in the pending claims.

Appellant's claims are specific regarding a supercharger "which includes a turbine that is provided in the exhaust passage at a position upstream of the catalyst." The Final Rejection alleged, and the Examiner's Answer reiterates, that "one having ordinary skill in the art would have found it is obvious to position an oxidizing catalyst downstream of the turbine of the turbocharger *if conditions are required* such as not all the particulate matter being oxidized in the PDF," emphasis added, which Appellant understands to be the diesel particulate filter DPF of Saito.

Saito explicitly shows a supercharger 18 that includes a turbine 20 that is provided in the exhaust passage at a position downstream of the catalyst 22. Saito explicitly discloses the advantages to the depicted and described configuration. *See* Appellant's Brief on Appeal ("Brief") at page 13, lines 3-14.

The Examiner's Answer fails where it addresses Appellant's previously well-made arguments by *emphatically* stating "the catalyst having oxidizing ability and being rearranged at downstream of the turbine does not effect [sic] on the operation of the whole engine system and still performs its function of reducing exhaust emissions." *See* Examiner's Answer at page 14. To any extent that this statement is in fact true, it is irrelevant to the obviousness rejection of the pending claims. A conclusion by the Examiner's Answer that randomly moving the catalyst in the exhaust passage may or may not adversely affect its function of reducing exhaust emissions overlooks the specific advantage of the structural placement explicitly disclosed in Saito. For this reason alone, the obviousness rejection of claim 10, and similarly claims 14 and 18, which include similar features, is in error.

It should also be noted that in Appellant's disclosure, at least at page 2, lines 18 and below, describes shortfalls in the claimed configuration that are overcome otherwise by the combinations of features recited in the pending claims which would additionally have

directed one of skill in the art away from making the modification proposed by the Office Action, as reiterated in the Examiner's Answer.

The conclusions of the Examiner's Answer require overlooking the totality of the evidence of record regarding the relative positioning of the catalyst and the turbine. The Examiner's Answer clearly overlooks this evidence in continuing to make the assertion that randomly moving a catalyst anywhere in an exhaust passage would still allow it to function. It is not the presence of the catalyst in the exhaust passage, but rather the placement of the catalyst with respect to the turbine that is at issue. Saito specifically discloses the advantage to the disclosed structural interrelationship of Saito, which is opposite that of the claims, while Appellant's disclosure specifically discusses known disadvantages of the claimed order. As such, it is unreasonable for the Office Action, and now the Examiner's Answer, to conclude that one of ordinary skill in the art would have modified Saito in the manner suggested to render obvious the subject matter of the pending claims.

**2. Saito Fails to Disclose Additional Features
Attributed to the Reference**

Saito fails to teach, or otherwise to have rendered obvious, any feature that can reasonably be considered to correspond to "when a work amount of the compressor is increased ... the turbine rotation controller decreases the amount of energy taken from the exhaust gas for rotating the turbine in order to decrease the increase in the work amount due to the after injection to zero." This feature is recited in independent claim 10, and similarly recited in independent claims 14 and 18. At page 14 of the Brief, Appellant argued that this feature is not shown in the paragraphs cited by the Office Action in the Final Rejection. The Examiner's Answer, at pages 14 and 15, wrongly alleges that Saito discloses such a feature. The Examiner's Answer, in attempting to clarify its position, discloses the error in its analysis. Specifically, the Office Action refers to separate and exclusive modes of operation of the

device disclosed in Saito. In its own admission, the Examiner's Answer states "paragraph [0046] of Saito discloses the post-injection increases the work amount of the compressor *as the waste gas valve is closed* and the work amount of the compressor is increased." See Examiner's Answer at page 14 (emphasis added). This state refers to the operating mode recited in claim 2 of Saito in which the waste gate valve is closed. Separately, the Examiner's Answer refers to "[p]aragraph [0048] of Saito also shows that *as the waste gate valve is open*, neither the work amount of the turbine nor the work amount of the compressor is increased." *Id.* (emphasis added). This state refers to the operating mode recited in claim 4 of Saito in which the waste gate valve is open. Therefore, the Examiner's Answer describes two separate and distinct operating modes for the disclosed device, one in which the waste gate valve is closed and the work amount of the compressor is increased, and another in which the waste gate valve is opened, and neither the work amount of the turbine nor the work amount of the compressor is increased. As such, the Examiner's Answer virtually admits that there is no operating condition in which "when a work amount of the compressor is increased, the turbine rotation controller decreases the amount of energy taken from the exhaust gas for rotating the turbine in order to decrease the increase in the work amount due to the after-injection to zero."

For all of the foregoing reasons, the rejection of the claims over Saito fails, and should be withdrawn.

C. The Examiner's Answer Mischaracterizes The Totality Of Appellant's Arguments Regarding The Combination Of Saito In View Of Kobayashi Or Nagae

The Examiner's Answer completely bypasses the assertion in the Brief, beginning at page 15, line 5, that the application of Saito in this rejection fails for the same reasons that the rejection over Saito alone fails. The Office Action applies either of Kobayashi or Nagae only for allegedly teaching "that it is conventional in the art of controlling exhaust emissions for

turbo charged internal combustion engines, to utilize the catalyst having an oxidizing ability." See page 9 of the Final Rejection. The Examiner's Answer fails to address this argument.

Further, one of skill in the art would not have combined the references in the manner suggested. The Brief rebuts the assertions made in the Office Action that one of ordinary skill in the art would have predictably combined the references in the manner suggested to a specific purpose, or that the combination would have simply yielded predictable results. As evidence of the fallacy in either of these arguments, the Brief discusses the shortfalls in the prior art, as enumerated in Appellant's specification, that the subject matter of the pending claims is intended to overcome. The Examiner's Answer convolutes this argument alleging that Appellant is trying to import limitations from the specification into the claims. This is simply not the case. Appellant's Brief points to specific disclosures in Appellant's specification that accurately and completely rebut the erroneous assertions made in the Office Action that the asserted combination would have led to "no more than predictable results." It simply does not matter that either of the secondary references allegedly discloses an oxidizing catalyst. This alleged evidence would not have predictably resulted in the subject matter of the pending claims. For all the reasons enumerated above regarding the inadequacy in the application of the Saito reference to the subject matter of the pending claims as a whole, and additionally because the results gained by the subject matter of the pending claims simply would not have been predictable for the reasons set forth in the Brief, these rejections necessarily fail.

**D. The Attempts At Rebuttal Of Appellant's Arguments
Regarding Claims 13 And 17 Similarly Fail**

As the Examiner did with the rejection of Saito discussed above, the Examiner's Answer attempts to rebut Appellant's well-made arguments regarding the non-applicability of the applied references to the features positively recited in dependent claims 13 and 17 in

addition to the argument over the independent claims. *See* pages 16 and 17 of the Brief. The Examiner's Answer picks widely disparate disclosures from the Kawamoto reference, *i.e.*, differing steps in the method of Kawamoto, to attempt to assert that Kawamoto allegedly teaches the features recited in claims 13 and 17.

As with the attempted explanation regarding the rejection of Saito, the additional explanation regarding the application of Kawamoto equally fails. What occurs in step 4 of Kawamoto is completely different from what occurs in step 8 of Kawamoto. Any attempt to combine the differing modes of operation for the Kawamoto device described in step 4, at paragraph [0026], and step 8, at paragraph [0030], of the reference as being contemporaneous and leading to a single set of parameters or features as are recited in the claims is purely without basis based on an accurate reading of the Kawamoto reference.

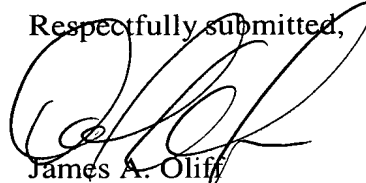
As such, and in addition to the fact that claims 13 and 17 depend from allowable base claims, these claims are also separately patentable over the combinations of applied references based on the additional features that they recite, which are not shown in the Kawamoto reference.

E. Conclusion

For the totality of the reasons set forth above, the attempts at rebuttal of Appellant's well-made arguments presented in the Brief necessarily fail. As such, and in combination with the arguments set forth in the Brief, claims 10, 13, 14, 17 and 18 are patentable over the currently-applied combinations of references. Claims 11, 12, 15 and 16 are also patentable

over the applied references for at least their dependence on allowable base claims. Appellant, therefore, respectfully requests that this Honorable Board reverse the prior art rejections of claims 10-18 and place this application in condition for allowance.

Respectfully submitted,



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